

126. The method of claim 124, wherein the *Fusarium venenatum* cell is a morphological mutant.

127. The method of claim 126, wherein the *Fusarium venenatum* cell is a morphological mutant of *Fusarium venenatum* ATCC 20334.

128. The method of claim 124, wherein the cyclohexadepsipeptide synthetase gene encodes a cyclohexadepsipeptide synthetase selected from the group consisting of:

(a) a cyclohexadepsipeptide synthetase having an amino acid sequence which has at least 70% identity with SEQ ID NO: 2; and

(b) a cyclohexadepsipeptide synthetase which is encoded by a nucleic acid sequence which hybridizes under medium stringency conditions with (i) the nucleic acid sequence of SEQ ID NO: 1, (ii) the cDNA sequence of SEQ ID NO: 1, or (iii) a complementary strand of (i), (ii), or (iii); and

(c) a fragment of (a) or (b) that has cyclohexadepsipeptide synthetase activity.

129. The method of claim 124, wherein the cyclohexadepsipeptide synthetase gene encodes the cyclohexadepsipeptide synthetase of SEQ ID NO: 2.

130. The method of claim 129, wherein the cyclohexadepsipeptide synthetase gene has the nucleic acid sequence of SEQ ID NO: 1.

131. The method of claim 124, wherein the mutant cell produces at least about 25% less of the cyclohexadepsipeptide than the parent filamentous fungal cell when cultured under identical conditions.

132. The method of claim 124, wherein the mutant cell produces no cyclohexadepsipeptide.

133. The method of claim 124, wherein the mutant cell comprises at least two copies of the first nucleic acid sequence.

134. The method of claim 124, wherein the secreted heterologous polypeptide is a hormone, enzyme, receptor or portion thereof, antibody or portion thereof, or reporter.

135. The method of claim 134, wherein the enzyme is an oxidoreductase, transferase, hydrolase, lyase, isomerase, or ligase.

136. The method of claim 124, wherein the mutant cell further comprises one or more third nucleic acid sequences, which have been modified to reduce or eliminate expression of the one or more third nucleic acid sequences.

137. The method of claim 136, wherein the third nucleic acid sequence encodes an enzyme selected from the group consisting of an aminopeptidase, amylase, carbohydrase, carboxypeptidase, catalase, cellulase, chitinase, cutinase, cyclodextrin glycosyltransferase, deoxyribonuclease, esterase, alpha-galactosidase, beta-galactosidase, glucoamylase, alpha-glucosidase, beta-glucosidase, invertase, laccase, lipase, mannosidase, mutanase, oxidase, pectinolytic enzyme, peroxidase, phytase, polyphenoloxidase, proteolytic enzyme, ribonuclease, transglutaminase, and xylanase.

138. The method of claim 136, wherein the third nucleic acid sequence encodes a protease.

D  
139. A cyclohexadepsipeptide-deficient mutant cell of a parent *Fusarium venenatum* cell, comprising (i) a first nucleic acid sequence encoding a secreted heterologous polypeptide, and (ii) a second nucleic acid sequence comprising a modification of a cyclohexadepsipeptide synthetase gene, wherein the *Fusarium venenatum* mutant cell produces less cyclohexadepsipeptide than the parent *Fusarium venenatum* cell when cultured under the same conditions.

140. The mutant cell of claim 139, wherein the *Fusarium venenatum* cell is *Fusarium venenatum* ATCC 20334.

141. The mutant cell of claim 139, wherein the *Fusarium venenatum* cell is a morphological mutant.

142. The mutant cell of claim 141, wherein the *Fusarium venenatum* cell is a morphological mutant of *Fusarium venenatum* ATCC 20334.

143. The mutant cell of claim 139, wherein the cyclohexadepsipeptide synthetase gene encodes a cyclohexadepsipeptide synthetase selected from the group consisting of:

(a) a cyclohexadepsipeptide synthetase having an amino acid sequence which has at least 70% identity with SEQ ID NO: 2; and

(b) a cyclohexadepsipeptide synthetase which is encoded by a nucleic acid sequence which hybridizes under medium stringency conditions with (i) the nucleic acid sequence of SEQ ID NO: 1, (ii) the cDNA sequence of SEQ ID NO: 1, or (iii) a complementary strand of (i), (ii), or (iii); and

(c) a fragment of (a) or (b) that has cyclohexadepsipeptide synthetase activity.

144. The mutant cell of claim 139, wherein the cyclohexadepsipeptide synthetase gene encodes the cyclohexadepsipeptide synthetase of SEQ ID NO: 2.

145. The mutant cell of claim 144, wherein the cyclohexadepsipeptide synthetase gene has the nucleic acid sequence of SEQ ID NO: 1.

146. The mutant cell of claim 139, wherein the *Fusarium venenatum* cell comprises at least two copies of the first nucleic acid sequence.

147. The mutant cell of claim 139, wherein the secreted heterologous polypeptide is a hormone, enzyme, receptor or portion thereof, antibody or portion thereof, or reporter.

148. The mutant cell of claim 147, wherein the enzyme is an oxidoreductase, transferase, hydrolase, lyase, isomerase, or ligase.

149. The mutant cell of claim 139, wherein the mutant cell further comprises one or more third nucleic acid sequences, which have been modified to reduce or eliminate expression of the one or more third nucleic acid sequences.

150. The mutant cell of claim 149, wherein the third nucleic acid sequence encodes an enzyme selected from the group consisting of an aminopeptidase, amylase, carbohydراse, carboxypeptidase, catalase, cellulase, chitinase, cutinase, cyclodextrin glycosyltransferase, deoxyribonuclease, esterase, alpha-galactosidase, beta-galactosidase, glucoamylase, alpha-glucosidase, beta-glucosidase, invertase, laccase, lipase, mannosidase, mutanase, oxidase,